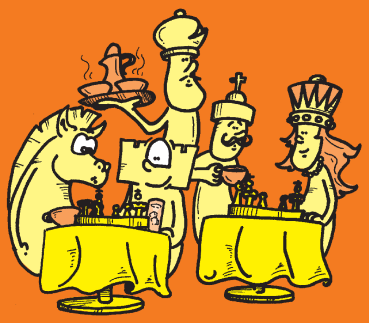


THE PUZZLING SIDE OF CHESS

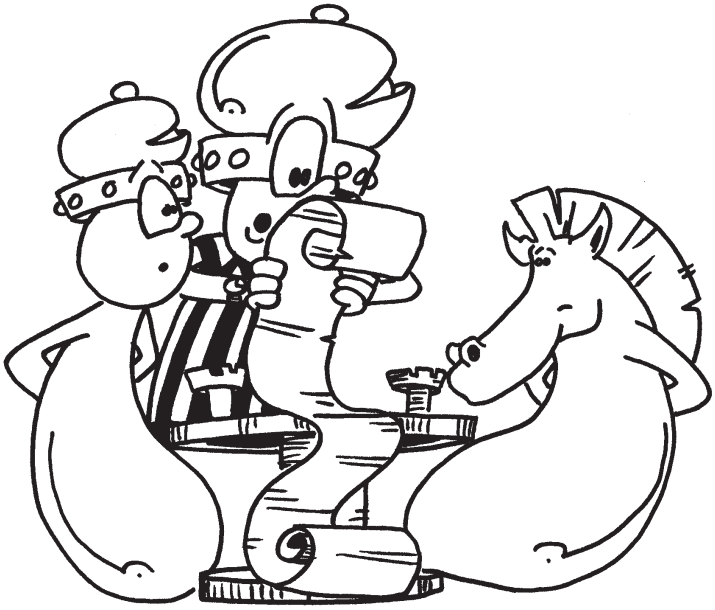
Jeff Coakley

DEAD AS A DOORNAIL

number 149 May 5, 2018

In the retrograde analysis of chess problems, *dead reckoning* is a method used to determine previous moves based on “dead positions”.

A position is dead if there is no possibility of checkmate for either side, even if one side is playing the worst moves imaginable.



The basis of dead reckoning, DR for short, is FIDE rule 5.2.2.
“*The game is drawn when a position has arisen in which neither player can checkmate the opponent’s king with any series of legal moves. This immediately ends the game.*”

The fundamental principle of dead reckoning is:

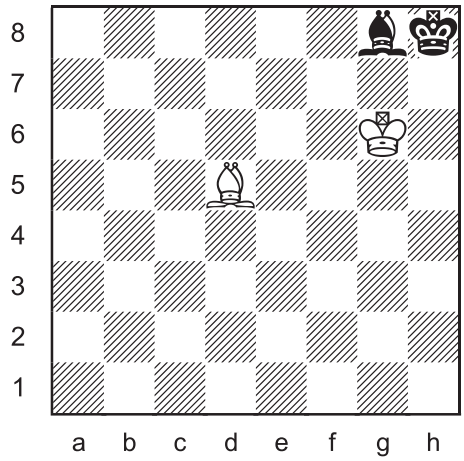
The last move was not made from a dead position.

In other words, the position before the last move has to be alive. There must still be the possibility of checkmate.

This column, like number 145, features four problems involving DR: two last move retros, a rebus, and a construction task. For an introduction to dead reckoning, see column 127.

Here's another early problem by dead reckoner Andrew Buchanan.

Retro 41



White to play.
What was the last move?

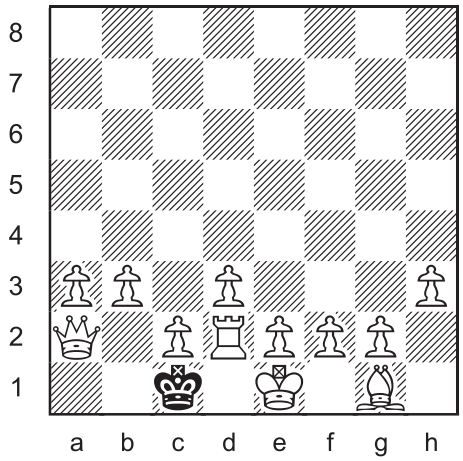
Be as precise as possible. A complete description of a move includes the square a piece moved from, whether a capture was made, and if so, what type of piece was taken.

The expression "dead as a doornail" is nearly as old as the English language. Examples in literature date back to the 14th century. In 1590, it was used by Shakespeare in the play *Henry VI*, *Part II*, where the rebel Jack Cade says, "If I do not leave you all as dead as a doornail, I pray god I may never eat grass more." A strange proclamation out of context.

How the expression arose is uncertain, but the meaning is clear. *Unquestionably and absolutely dead.*

The following problem is much more challenging. A joint composition by Andrew Buchanan and Noam Elkies.

Retro 42



What was the last move?

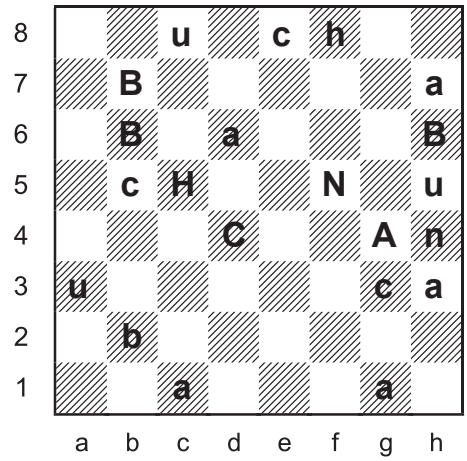
Doornails in Action

Chess rebuses are sudoku-style retro problems. Be careful, they can become addictive.

Determining the colour of the pieces is often the trickiest part in solving these puzzles. Sorry for the unsolicited hint, but don't forget that this a column about dead reckoning.

This potential stumper is called "banana bunch", an anagramic jumble for the name of a master chess navigator.

Rebus 15

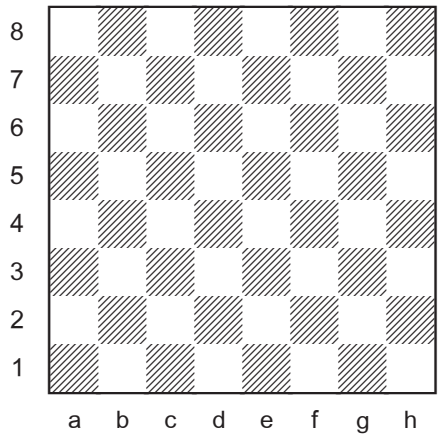


Each letter represents a different type of piece.
Uppercase is one colour, lowercase is the other.
Determine the position, and if possible, the last move.

Did you know that bananas grow pointing up?

Our final problem is a *DR construction task* in which the goal is a dead position with the longest sequence of moves leading to an inevitable stalemate. Can you break the record? Good luck!

Inevitable Stalemate Move Maximizer



Construct a position where stalemate cannot be avoided by either side and the number of moves leading to stalemate is maximized.

The position must be legal, which means “reachable in an actual game”.

Red Deckoning

SOLUTIONS

PDF hyperlinks. You can advance to the solution of any puzzle by clicking on the underlined title above the diagram. To return to the puzzle, click on the title above the solution diagram.

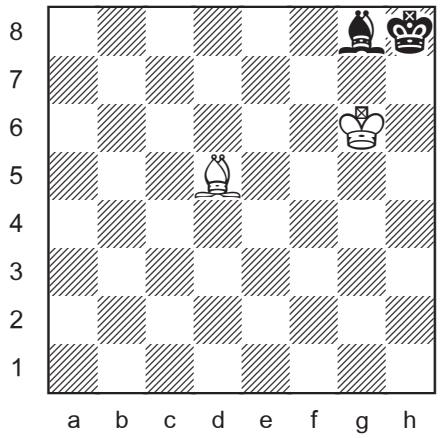
Archives. Other columns with similar problems can be found in the *Puzzling Side* archives. Now complete, with an index of problem-types and composers.

Retro 41

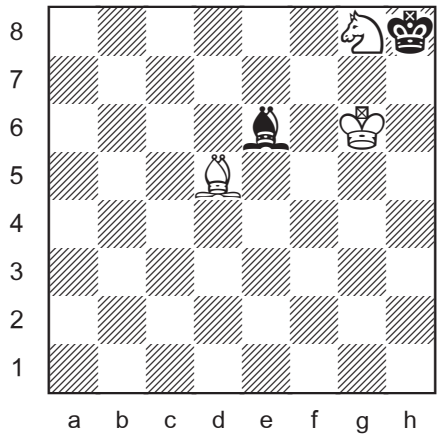
Andrew Buchanan 2001

(inverted with reverse colouring)

anselan.com



last move: 1...Be6xg8(N)



previous position

Since the black king could not have moved from g7 or h7, the last move was by the black bishop. It necessarily came from e6, because it would have been checking the white king if it stood on f7 or h7.

The last move had to be a capture, otherwise the position was already dead. Mate with K + B vs. K + B is impossible if the bishops are on the same colour squares.

Black did not capture a bishop on g8. The earlier position with three bishops on light squares is dead.

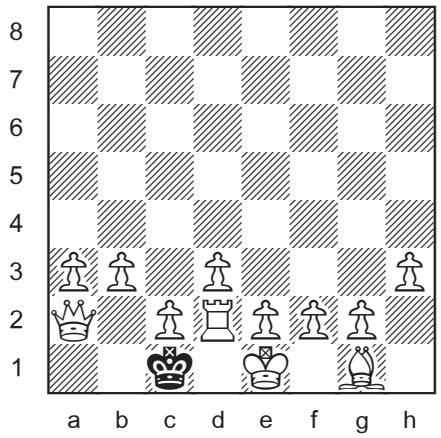
The bishop did not capture a queen or rook because Black would be in check, and the only way out of check would be to take on g8. That means the position would already be dead before the capture.

Therefore, the bishop captured a knight on g8. The previous position was still alive because Black was not forced to capture the knight.

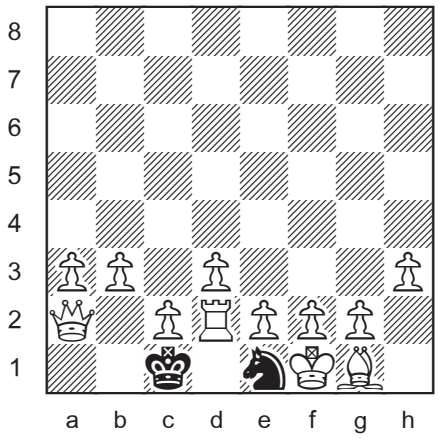
Retro 42

Andrew Buchanan & Noam Elkies 2001

Retro Mailing List



last move: 1.Kf1xe1(N)



previous position

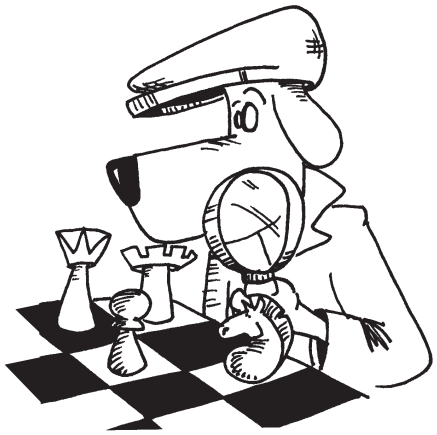
The black king did not make the last move. He could not have moved from b1, b2, or d1. So the last move was by White.

The last move was not 1.b2-b3 or 1.b2xa3 because the black king could not have reached the 1st rank with a pawn still on b2. It was not 1.h2-h3 because in that case, there could not be a bishop on g1.

The last move had to be a capture, otherwise Black had no move on the preceding turn. (The non-capture 1.Kf1-e1 doesn't work since the black king would be in an impossible check from the rook on d2 if he stood on d1.)

So the two candidate last moves are 1.Bh2xg1 and 1.Kf1xe1.

Black stands in stalemate in the given position. As we all know by now, the last move was not made from a dead position. The game was still alive before White's last move. There was still a possible path to checkmate.



Consider the position with white bishop on h2 and a black piece on g1. If the black piece is a rook or queen, White is in check and has no choice except to take on g1, giving stalemate. So the position would already be dead before the capture.

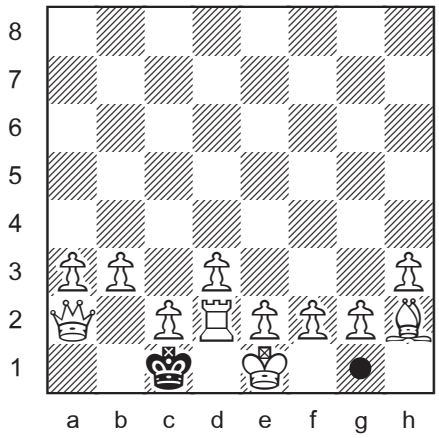
If the black piece on g1 is a bishop, Black had no move on the preceding turn.

If the black piece on g1 is a knight, Black had no move on the preceding turn. The knight would be checking the white king from f3.

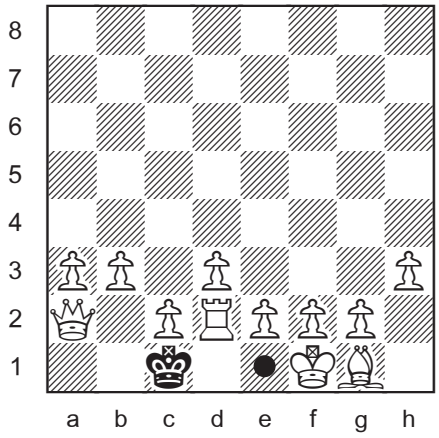
So the last move was not 1.Bh2xg1. It had to be 1.Kf1xe1. What was captured?

The black piece taken on e1 was not a rook or queen because White would have to capture it, which means of course that the position was already dead.

The black piece could not be a bishop because Black would not have a move on the preceding turn.



position before 1.Bh2xg1



position before 1.Kf1xe1

Grand conclusion: A black knight was captured on e1. White had the option of not taking the knight, so the position was still alive. Perhaps 1.c4 was a better move!

The preceding move by Black was ...Nf3>e1. This move may or may not have been a capture. If it was a capture, a white knight was taken.

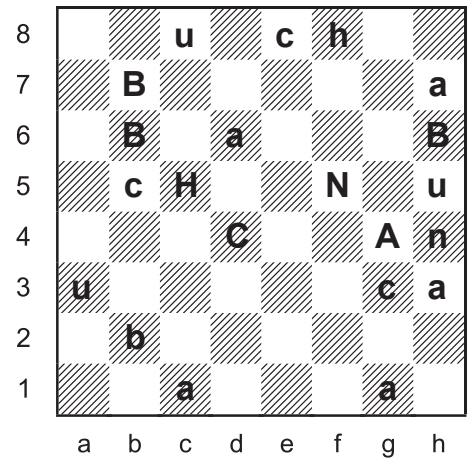
Living Nails

Rebus 15

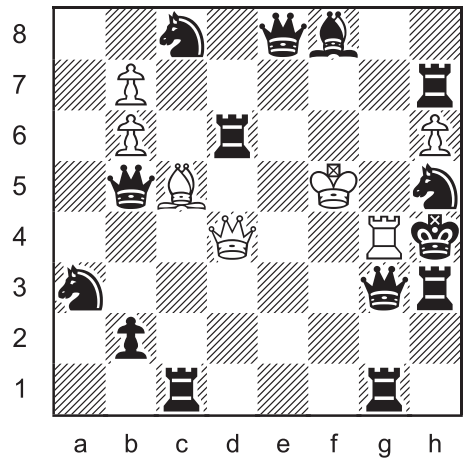
Andrey Frolkin & Jeff Coakley 2018

Puzzling Side of Chess

"banana bunch"



B = pawn
U = knight
C = queen
H = bishop
A = rook
N = king
A = rook
N = king
caps = white
last move
1.Rxg4+



♔ = (HN) The two letters with one uppercase, one lowercase.

♙ = (BN) The other four letters are on the 1st or 8th rank.

If H = ♔

At least one of the letters ACNU is a queen or rook. So one of the kings is in check along a rank or file (c/b5, a/c1, u/c8, N/f5).

A ≠ ♕ (c1+ d6+) Impossible double check.

B ≠ ♕ (h6+) Impossible multiple check.

U ≠ ♕ (a3+ c8+) Impossible double check.

N ≠ ♕

If N = ♕ (f5+) King on f8 is in check.

B = ♙ Only remaining letter not on 1st or 8th rank.

♖ = Ø? Impossible to assign rook to any letter. Both kings in check if ♖ = (ACU)

C ≠ ♕

If C = ♕ (b5+) King on c5 is in check.

AU ≠ ♙

A ≠ ♖ (c1+) Impossible double check.

A ≠ ♗ (d6+) Impossible double check.

U ≠ ♖ (c8+) Impossible double check.

U ≠ ♗ (a3+) Impossible double check.

AU = ? Impossible to assign pieces to both A and U. Only one can be a knight.

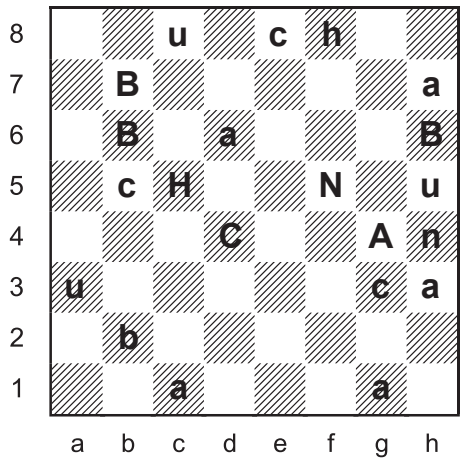
♕ = Ø? Impossible to assign queen to any letter.

H ≠ ♔

N = ♔

B = ♗

A ≠ ♕ If A = ♕ then both kings in check (g4+ h7+).



One of the kings is in <u>check</u> from the letter A. (♖g4+, ♗h7+, or ♘d6+)

U ≠ ♕ (c8+ h5+) Impossible double check.

U ≠ ♖ (h5+) Impossible multiple check.

U ≠ ♗ (c8+) Impossible multiple check.

U = ♘

H ≠ ♕♖ (f8+) Impossible multiple check. A discovered double check by *Nf7-d6*+ with A = ♘ is impossible because U = ♘.

H = ♗

C = ♕ If A = ♕ then impossible double check (g4+ h7+).

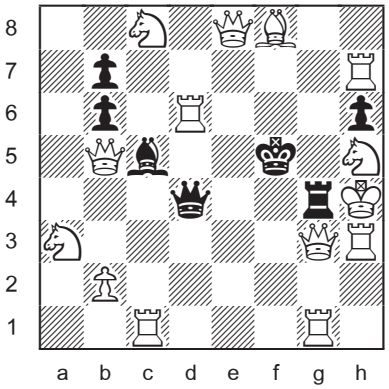
A = ♖ (g4+) The king on h4 is in <u>check</u> from a rook on g4.

The last move (Rxg4+) had to be a capture, otherwise the king was already in check, either by the rook if it moved along the 4th rank, or by the queen on d4 if the rook moved along the g-file.

But what colour are the pieces?

Time for dead reckoning! Consider the position with caps = black and last move 1...Rxg4+. The position is dead because the forced sequence 2.Qxg4+ Qxg4+ 3.Rxg4 is stalemate.

try: caps = black



(14 + 7)

White is missing two pieces. One was taken on b6 (by the doubled pawn) and the other was taken on g4. One of the missing white pieces is a light-square bishop. It could not be captured on the dark square b6. So the last move was 1...RxB+, and before that move, Black was in check from a bishop on g4.

In that position, with a white bishop on g4, and the black rook able to capture it (from e4, f4, g5, g6, g7, or g8), Black's only option is to capture the checking bishop. It doesn't matter if Black takes first with the queen or rook, the forced sequence of captures on g4 will lead to stalemate. So the position before 1...Rxg4+ was already dead.

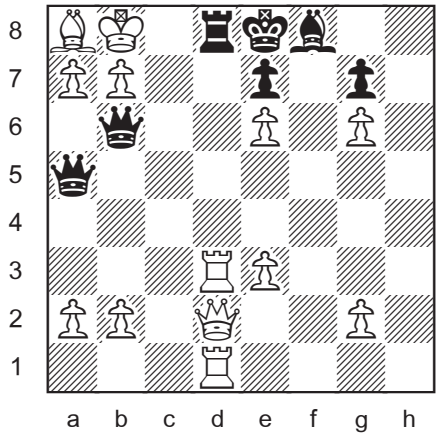
Therefore uppercase is white! No stalemate with a white pawn on b7.

Inevitable Stalemate Move Maximizer

J. Coakley 2018

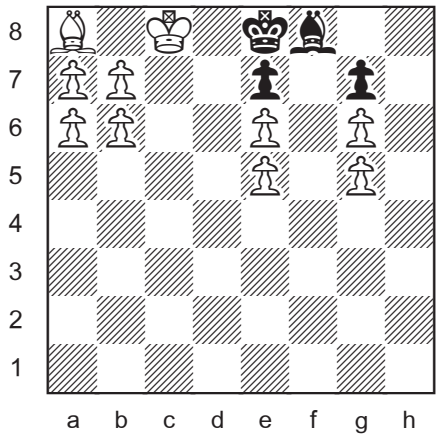
dedicated to Noam Elkies

Puzzling Side of Chess



Inevitable stalemate after 33 single moves.

1.Rxd8+ Qxd8+ 2.Qxd8+ Qxd8+ 3.Rxd8+ Kxd8 4.a3 Ke8 5.a4 Kd8 6.a5 Ke8 7.a6 Kd8 8.b3 Ke8 9.b4 Kd8 10.b5 Ke8 11.b6 Kd8 12.e4 Ke8 13.e5 Kd8 14.g3 Ke8 15.g4 Kd8 16.g5 Ke8 17.Kc8 stalemate.



The final move could also be 17.Kc7. After 3...Kd8, the white moves can be played in various orders. Stalemate would occur sooner if the a-pawn and b-pawn advanced two squares on their first moves or if the white king moved earlier.

The constructed position is dead. The moves which lead to stalemate, though legal, are unplayable because the game is over according to the dead position rule.

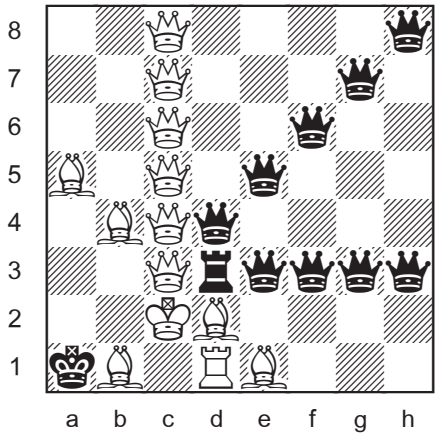
The idea of including pawn moves in this task comes from the ever creative Noam Elkies. His prototype is given two pages below.

Previously, the task record had been an extraordinary pawnless position by Andrew Buchanan. See next page.

Inevitable Stalemate Move Maximizer

Andrew Buchanan 2013

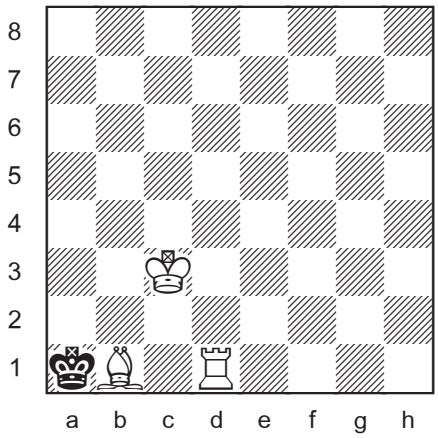
Puzzling Side of Chess 2018



Inevitable stalemate after 20 single moves.

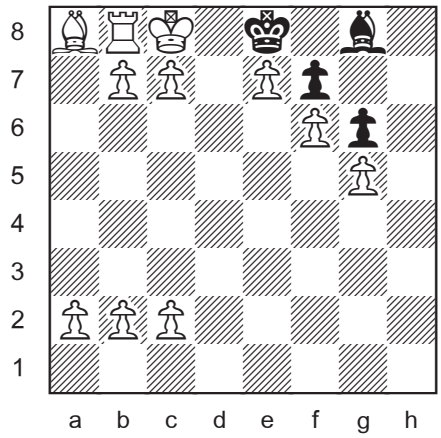
1...Qxc3+ 2.Bdxc3+ Qxc3+ 3.Bexc3+ Qxc3+ 4.Bxc3+ Qxc3+
5.Bxc3+ Qxc3+ 6.Qxc3+ Rxc3+ 7.Qxc3+ Qxc3+ 8.Qxc3+ Qxc3+
9.Qxc3+ Qxc3+ 10.Qxc3+ Qxc3+ 11.Kxc3 stalemate

The captures can be played in various orders, but the end result is always the same.



Inevitable Stalemate Move Maximizer

Noam Elkies 2016



With Black to move, inevitable stalemate after 27 single moves.
(Only 26 if White plays first.)

1...Bh7 2.a3 Bg8 3.a4 Bh7 4.a5 Bg8 5.a6 Bh7 6.a7 Bg8
7.b3 Bh7 8.b4 Bg8 9.b5 Bh7 10.b6 Bg8 11.c3 Bh7 12.c4 Bg8
13.c5 Bh7 14.c6 Bg8 stalemate

Surprisingly, it is the side with mobile pawns that gets stalemated.

Until next time!